Faculty Details proforma for DU Web-site

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cc: director@ducc.du.ac.in

Title	Dr.	First Name	M	Last Name	Thirumal	Photograph
Designation		Professor				
Address		No. 209, Multistoreyed Building Department of chemistry University of Delhi Delhi				
Phone No	Office	91 -011-27666646-176				
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Educational Qualifications

Degree	Institution	Year
Ph.D.	IIT Delhi	2001
M.Tech.	IIT Delhi	1995
PG	Madras University	1992
UG	Madras University	1990

Career Profile

Professor	Delhi University	2013 -till date
Reader/ Associate Professor	Delhi University	2007- 2013
Post –doc	University of Pennsylvania	2001- 2006
Scientist	IIT Delhi	February 2001- August 2001

Administrative Assignments

Treasurer- IGIPESS, Delhi University 2019 to till date
Member, managing committee -D.S.Kothari Hostel, Delhi University 2019 to till date
Member, governing body -Sri Venkateshwara Dental college, Puducherry 2019-till date
Convener, Physical chemistry section 2018-2019
Convener, Bill committee –Department of Chemistry 2017-2019
Member, Board of studies- kurukshetra University
Member, Board of studies- GGSIP Univeristy, Delhi
Coordinator Central evaluation May June -2018
Deputy Superintendent M.Sc Practical examinations I and III Semester 2016
Secretary, Staff council 2012- 2015
Deputy Superintendent M.Sc examinations I and III Semester 2013
Convener, Physical chemistry section 2008-2009
Member of various committees in the Chemistry department

Areas of Interest / Specialization

Microwave Dielectrics, Multiferroics, Solid Oxide Fuel cells, Non Lead based ferroelectric and Piezoelectric materials, Phosphors, and Nanomaterials

Subjects Taught

Irreversible Thermodynamics, Transport phenomena, Surface phenomena, Fast reactions

Molecular structure: Spectroscopic and diffraction Methods Masters students III semester

Analytical Techniques for Material Characterization

Nanochemistry

Physical chemistry experiments Master students I and II semester

Teaching Assistant in IIT Delhi for Masters and B.Tech students

Research Guidance

Supervision of awarded Doctoral Thesis:

Ram Jeewan Yadav: Complex Oxides for Dielectric Resonator Applications

Jyoti Tanwar: Synthesis and characterization of novel ligands for targeted molecular imaging

Swetha Sharma: Design and synthesis of Pyrazines, Imidazolones, Chromones and their Anticancer and Transacetylase Activities

Ms. Ritu Payal – Photophysical Investigations of some Biologically Active Thymol Based Schiff Bases using Absorption and Fluorescence Spectral Studies in Homogeneous and Heterogeneous Media (jointly with Professor R.C. Rastogi)

Mr. K Ganesh Kadiyala – Smart multimodal agents for Targeted – Molecular Imaging (jointly with Dr. Anupama Datta INMAS)

Ms. Nibedita - Lanthanide based double perovskites and their dielectric properties (Jointly with Professor A. K. Ganguli IIT Delhi)

Mr. Sandeep Kumar – Core/Shell Heterostructures: Synthesis, Characterization and their photocatalytic Applications (Jointly with Professor A. K. Ganguli IIT Delhi)

Ms. Yogita Bisht: Microwave Dielectrics: Understanding the reproducibility issues in complex oxides

Ms. Richa Tomar: Synthesis and Characterization of new oxides for magnetic and electrical properties

Ms. Devla – Antimycobacterial and Anti-Leishmanial activity of analogues of chromone-dihydropyridines, coumarins and some Natural products.

Supervision of Doctoral Thesis, Under Progress:

Mr. Ajay Pratap Singh: Nanomaterials: Transition Metal Nano oxides for photocatalytic applications

Ms. Sachi

Ms. Liza Sarma

Ms. Garima

Ms. Kharu Nisa

Publications Profile

- Synthesis and antimycobacterial activity of 1-(β-D-Ribofuranosyl)- 4-coumarinyloxymethyl- / -coumarinyl-1,2,3-triazole Srivastava, S., Bimal, D., Bohra, K.. Thirumal, M., Prasad, A.K. European Journal of Medicinal Chemistry 150, 268 (2018).

- Pr2FeCrO6: A Type i Multiferroic Das, N., Singh, S., Joshi, A.G. Thirumal M, Reddy V.R, Gupta, L.C. Ganguli, A.K. Inorganic Chemistry 56(21),12712 (2017)

- Microwave dielectrics: Solid solution, ordering and microwave dielectric properties of (1-x)Ba(Mg1/3Nb2/3)O3-xBa(Mg1/8Nb3/4)O3ceramics Bisht, Y., Tomar, R., Abhilash, P., Lekshmi, D.R., Thirumal, M. Bulletin of Materials Science 40(6), 1165 (2017).

- Dominant {100} facet selectivity for enhanced photocatalytic activity of NaNbO3 in NaNbO3/CdS core/shell heterostructures Sandeep Kumar,ad R. Parthasarathy,a Aadesh P. Singh,bc Björn Wickman,c Meganathan Thirumald and Ashok K. Ganguli Catalysis Science & Technology 7(2), 481(2017).

- Fabrication of TiO2/CdS/Ag2S Nano-Heterostructured Photoanode for Enhancing Photoelectrochemical and Photocatalytic Activity under Visible Light Kumar, Sandeep; Singh, Aadesh P.; Yadav, Nitin; Thirumal Meganathan; Mehta, B. R.; Ganguli, Ashok K ChemistrySelect 1(15), 4891 (2016).

- Visible-Light-Driven Photoelectrochemical and Photocatalytic performance of $NaNbO_3/Ag_2S$ core-shell Heterostructures Kumar, Sandeep; Singh,Aadesh P;Bera,Chandan;.Thirumal, Meganathan;Mehta,B.R; Ganguli.Ashok K ChemSusChem 9 (14), 1850 (2016).

- Monoclinically distorted perovskites, A_2ZnTiO_6 (A=Pr, Gd): Rietveld refinement, and dielectric studies Nibedita Das, Masood A. Nath, M.Thirumal, A.K.Ganguli. J. Solid State Chem., 229, 97 (2015).

- Picolinic acid based acyclic bifunctional chelating agent and its methionine conjugate as potential SPECT imaging agents: syntheses and preclinical evaluation Kadiyala, K. Ganesh; Tyagi, Tulika; Kakkar, Dipti; Chadha, Nidhi; Chuttani, Krishna; Roy, Bal Gangadhar; Thirumal, Meganathan; Mishra, Anil K.; Datta, Anupama RSC Advances 5(43), 33963 (2015) .

- Metal Based Imaging Probes of DO3A-Act-Met for LATI Mediated Methionine specific Tumors: Synthesis and Preclinical Evaluation K.Ganesh Kadiyala, anupama Datta, Jyoti Tanwar, Anupriya Adhikari, B.S.Hemanth Kumar, Krishna Chuttani, Meganathan Thirumal, Anil K.Mishra Pharm. Res. 32, 955, (2015).

- Achieving Enhanced visible-light driven photocatalysis using type-II $NaNbO_3$/CdS core /Shell heterostructures, Sandeep Kumar, Sunita Khanchandani, Meganathan Thirumal, Ashok. K.Ganguli Appl. Mater. Interfaces 6(15)13221, (2014).
- Design and synthesis of calcium responsive magnetic resonance imaging agent: Its relaxation and luminescence studies Jyoti Tiwari, Anupama Datta, Kanchan Chauhan, S.Senthil Kumaran, Anjani K.Tiwari, K.Ganesh Kadiyala, Sunil Pal, M.Thirumal, Anil K.Mishra European .Journal of Medicinal Chemistry 82, 225, (2014).
- Synthesis of functionalized furopyrazines as restricted dipeptidomimetics S. Claerhout, S.Sharma, C.Skold,C.Cavaluzzo,A.Sandstrom, M.Larhed, M.Thirumal, V.S.Parmar, E.V. Van der Eycken Tetrahedron 68(14), 3019, (2012).
- Tunable high Q perovskite dielectrics in the BaO-NiO-Ta_2O_5 system. Thirumal, Meganathan; Davies, Peter K. Journal of Materials Science 46(13), 4715, (2011).
- Tetrasubstituted 2-Imidazolones via Ag(I)-Catalyzed Cycloisomerization of Propargylic Ureas Vaibhav P. Mehta, Ajendra kumar Sharma, Sachin G. Modha, Sweta Sharma, Thirumal Meganathan, Virinder Singh Parmar, and Erik Van der Eycken J. Org. Chem. 76(14) 5867(2011).
- Facile synthesis of non-ionic dimeric molecular resonance imaging contrast agent: its relaxation and luminescence studies Tanwar, Jyoti; Datta, Anupama; Tiwari, Anjani K.; Chaturvedi, Shubhra; Ojha, Himanshu; Allard, Michele; Chaudary, N. K.; Thirumal, M.; Mishra, Anil K. Dalton Transactions 40(13), 3346. (2011).
- Preclinical Evaluation of DO3P-AME-DO3P: A Polyazamacrocyclic Methylene Phosphonate for Diagnosis and Therapy of Skeletal Metastases. Tanwar, Jyoti; Datta, Anupama; Tiwari, Anjani Kumar; Thirumal, Meganathan; Chuttani, Krishna; Mishra, Anil Kumar Bioconjugate Chemistry 22(2), 244 (2011).

- N-Heterocyclic Carbene Catalyzed Aroylation of 3,5-Dichloro-2(1H)-pyrazinones Vaibhav P. Mehta, Ajendra kumar Sharma, Sachin G. Modha, Sweta Sharma,, Thirumal Meganathan, Virinder Singh Parmar, and Erik Van der Eycken, J. Org. Chem. 76(8) 2920 (2011).

- Ternary Niobates and Tantalates: Materials for microwave Dielectrics Masood A Nath, M. Thirumal, Vishnu Shanker and A. K Ganguli Society for Materials chemistry Bulletin, 1(1) (2010).

- A new form of $MgTa_2O_6$ obtained by the molten salt method A. K. Ganguli, S. Nangia, M. Thirumal and P. L. Gai, J.Chem.Sci.,**118**(1), 37 (2006).
- $Ba_8ZnTa_6O_{24}$: A new high Q dielectric Perovskite M.Thirumal, and P. K. Davies J. Am. Ceram. Soc., **88**(8), 2126 (2005).
- Communicating with Wireless perovskites: cation order and Zinc volatilization P. K. Davies, A. Borisevich and M. Thirumal J. Eur. Ceram. Soc., **23**, 2461 (2003).
- Studies on dielectric oxide materials containing niobium and tantalum M. Thirumal, and A. K. Ganguli, Progress in Crystal Growth and Characterization of Materials, **44** (3), 147(2002).
- $Ba_3ZnTa_{2-x}Nb_xO_9$ and $Ba_3MgTa_{2-x}Nb_xO_9$ ($0 \leq x \leq 1$): synthesis, structure and dielectric properties M. Thirumal, I. N. Jawahar, K. P. Surendiran, P. Mohanan and A. K. Ganguli, Mater. Res. Bull., **37**(14), 2321 (2002).
- Synthesis and dielectric properties of $Ba_3ZnNb_2O_9$ and $Sr_3ZnNb_2O_9$ solid solution, M. Thirumal, and A. K. Ganguli, Bull. Mater. Sci., **25**, 259 (2002).
- Synthesis and microwave dielectric properties of $Sr_3Zn_{1-x}Mg_xNb_2O_9$ Phases, M. Thirumal, I. N. Jawahar, K. P. Surendiran, P. Mohanan and A. K. Ganguli, Mater. Res. Bull., **37**(1), 185 (2002).

- Phase analysis and dielectric properties of oxides obtained in the MgO – (1-x)Nb_2O_5 – (x)Ta_2O_5 system, M. Thirumal and A. K. Ganguli, Proceedings Indian Academy of Sciences, Chemical Sciences **113**(5-6), 603 (2001).

- Synthesis and dielectric properties of magnesium niobate-magnesium tantalate solid solutions, M. Thirumal and A. K. Ganguli, Mater. Res. Bull., **36**(13-14), 2421(2001).

- New double perovskites having low dielectric loss: $LaBaZnTaO_6$, $LaSrZnNbO_6$ and $Ba_2Zn_{0.5}Ti_{0.5}TaO_6$, A. K. Ganguli, V. Grover and M. Thirumal, Mater. Res. Bull., 36(11), 1967 (2001).

- Molten salt synthesis of complex perovskite – related dielectric oxides, M. Thirumal, P. Jain and A. K. Ganguli, Mater. Chem. and Phys., **70**,7 (2001)

- $Ba_3ZnTa_{2-x}Nb_xO_9$ and $Ba_3MgTa_{2x}Nb_xO_9$: Synthesis, Structural and Dielectric Studies, M. Thirumal, G. SenthilMurugan, K. B. R. Varma and A. K. Ganguli, Mater. Res. Bull., **35**, 2423 (2000).

- Influence of Strontium on the cubic to ordered hexagonal phase transformation in Barium Magnesium Niobate, M. Thirumal and A. K. Ganguli, Bull. Mater. Sci., **23**, 495 (2000).

- Phase analysis and dielectric properties of ceramics in the PbO-MgO-ZnO-Nb_2O_5 System: a comparative study of materials obtained by the ceramic and molten salt synthesis routes, M. Thirumal and A. K. Ganguli, Bull. Mater. Sci., **23**, 101 (2000).

Conference Organization/ Presentations (in the last three years)

- Core/Shell Heterostructures for Photocatalytic and Photoelectrochemical Water Splitting International conference on"Frontiers at the chemistry-allied Sciences Interface" 21-22 December, 2018 Jaipur, Rajasthan, INDIA
- Microwave dielectrics: Understanding the complexities in Perovskites 8th conference of Haridwar Chapter of *The Indian Science Congress Association* Nainital 14-15th October, 2017 Nainital INDIA

- Sustainable Chemical and Materials Science: Progress and Challenges! – National conference on Recent innovations in chemical sciences and environment technology (SCMS-2016) (March 03-March 04, 2017) Sri Aurobindo college Delhi, INDIA.

- Sustainable Chemical and Materials Science: Progress and Challenges! – National conference on sustainable chemical & Material sciences (SCMS-2016) (August 05-August 06, 2016) S.S.Jain Subodh college Jaipur, INDIA.

- Microwave dielectrics: Understanding the complexities in Perovskites M.Thirumal, Yogita Bisht and Richa Tomar- International Conference on Materials Science & Technology (March 01-March 04,2016)University of Delhi, INDIA.

- Microwave dielectrics: Understanding the complexities in Perovskites, M.Thirumal, Yogita Bisht and Richa Tomar- 18th CRSI National symposium in Chemistry (February 05-February 07, 2016, Punjab University,Chandigarh, INDIA.

Research Projects (Major Grants/Research Collaboration)

- DU-DST

Awards and Distinctions

- G.A.T.E (Graduate Aptitude Test in Engineering) 1994
- Young scientist award in the International School on Powder Diffraction by IUCr, held at Calcutta, India.1998.
- Second best Poster award In the National symposium and conference of ISCAS held in Jammu.1999.

Association With Professional Bodies

1. Reviewing
- Reviewer/ Referee for several International and National journals

2. Memberships
Life member Indian Association of solid state chemists and allied scientists

Other Activities
Member of various committees in the chemistry department

Signature of Faculty Member

- You are also requested to also give your complete resume as a DOC or PDF file to be attached as a link on your faculty page.